

the fighter pilots were correct, and before the next large-scale bombing efforts were launched into Germany they were given the freedom they had long sought.⁴⁵ General Spaatz had determined to force the battle in the air; that decision spelt the death knell of the *Luftwaffe*.

"At long last," says the official history, on 19 February 1944 the weather opened up over Germany and a concerted attack against the German aircraft industry was launched. Running daily through 25 February, the series of attacks involved over 3,300 bombers of the Eighth and more than 500 of the Fifteenth. Almost 10,000 tons of bombs were dropped, a scale of attack roughly equal to that of the Eighth Air Force during its entire first year of operations.⁴⁶ Enormously encouraged by the success of "Big Week," the air commanders could finally begin to hope that after all their trials and setbacks they had at last attained both the means and the technique to destroy from the air Germany's ability to carry on the war. But the weather over the target areas closed in again for a month, and when it cleared the control of the strategic air forces had passed to General Eisenhower, Supreme Commander, Allied Expeditionary Forces.

The planning for the assault on Normandy (Operation OVERLORD) dated back to the Casablanca Conference in January 1943. A part of this planning had always been the assumption that air forces would be employed in direct support of the landings. But in the early months of 1944 serious disagreements arose as to how best to provide air support to OVERLORD. Everyone (soldiers, sailors, airmen) agreed that the overriding goal of air operations was Allied air supremacy over the beachhead on D-Day and as long thereafter as necessary. Eisenhower's deputy (Air Chief Marshal Tedder), all the senior ground commanders, the commander-in-chief, Allied Expeditionary Air Forces (Air Chief Marshal Leigh-Mallory), and most—but not all—of the RAF staff insisted that the best way to bring this about would be for the air forces, beginning as early as 1 March 1944, progressively to destroy the railway network of northern France and the Low Countries. The idea was to create a "railway desert" that would prevent the enemy from moving his reserves into the assault area and generally from shifting troops and supplies behind his own lines. The targets would be marshalling yards, locomotive repair facilities, bridges, etc. Two important airmen, less well instructed in the strategic reason for the inability of the Allied Powers to penetrate the German lines between 1915 and 1917, did not agree.

Air Chief Marshal Sir Arthur Harris of RAF Bomber Command resented the basic idea of thus diverting his forces from their primary object. Accordingly, he argued that Bomber Command was simply not capable of effecting the degree of precision implied in the basic idea, a matter of some consequence since the bombs would be falling in France, Belgium, and Holland.

General Spaatz and his staff at USSTAF also did not agree, but for a decidedly different reason. They were convinced that the best way to assure air superiority was to defeat the German Air Force. In their eyes this could best be accomplished by attacking its fuel supply, especially the synthetic oil refineries. These targets, they reasoned, were far more important to the Germans than was the French railway system. Accordingly, it could be assumed that attacks launched against them would serve to flush the German Air Force and lead to a series of air battles that would greatly deplete its operational strength. They agreed that time was of the essence and that it would no longer serve to destroy aircraft factories; but an attack against aviation gasoline sources, leading inevitably to a contest with the front line German fighter strength, was seen as the most promising way to deplete the numbers of aircraft that might contest the landings. Also, by attacking into Germany the Allied air forces would require the Germans to hold back part of the fighter strength that might otherwise be deployed into northern France. Having at long last attained the means—the long range fighters—to force the air battle, Spaatz was adamant in pressing his views, forcing meeting after meeting in which acrimony, both stated and implied, reached hitherto unexampled heights.⁴⁷

After hearing the arguments of both sides, General Eisenhower decided the issue in favor of the "Rail Plan" rather than the "Oil Plan." This was hardly surprising in the circumstances. Whereas most of the invasion planners could visualize and calculate satisfactorily to themselves the effects, and particularly their presumed immediacy, of the railway attacks, it was not so easy to visualize the results of the oil attacks. This matter was decided in a series of meetings during February and March. The Combined Chiefs of Staff then confirmed their long-standing commitment to General Eisenhower that beginning on a date of his choosing and against targets of his selection, he would control the effort of all strategic and tactical air forces. This passage of control took effect at midnight on 13/14 April 1944.

It is at this point, where the most optimistic airmen in USSTAF thought they saw their most ambitious hopes and dreams go a'glimmering, that this narrative must pause. Precise mission statements to the contrary, there had been moments when some airmen had glimpsed the possibility of "victory through air power" alone. Such a victory had never been their assignment, but the line between hopes, dreams, and beliefs is often a thin one. Now the invasion would be launched with air forces playing only an "auxiliary" role; and making matters worse was a real fear that the selection of targets was such that the Allies would suffer unnecessary casualties in the attempt. While this bitter pill was being swallowed, both in Washington and London a definitive move was afoot that would lead to the creation of the United States Strategic Bombing Survey (USSBS). The London end of that move was being made partly by the leaders of the fight for the Oil Plan as against the Rail Plan. They saw here in a dramatic fashion the need for an authoritative, unbiased, factual analysis of bombing effects.⁴⁸

CHAPTER TWO

A QUESTION IS RAISED: "HOW EFFECTIVE IS BOMBING?"

Our engines threw against theirs, and theirs against ours; but never did I hear tell that ours had done very much damage.

John, Lord of Joinville,
describing a fight with the Saracens
in the Nile Delta, December 1249

On September 18th [1914] the first experiments with dropping bombs from the air were made by Major Musgrave. One bomb was dropped, and it exploded but not exactly where nor how it was expected to explode.

On October 7th [1914] a German left a card on us, *pour prendre conger*, from the air. He dropped a bomb on the Aerodrome. It fell in the field, on the opposite side of the road to where No. 5 Squadron were established. Theoretically, it was a beautiful shot, practically it hit a turnip. And this was to be the case with many bombing efforts in the future.

Maurice Baring, *R.F.C.H.Q.*,
1914-1918

When General Arnold asked Franklin D'Olier to take on the difficult task that the President had suggested to Secretary of War Stimson, he was taking the final step in a long process whose tangible roots can be traced back as far as early 1943. Far from being the President's suggestion, or Secretary Stimson's for that matter, the idea of conducting an evaluation of the bombing

Nevertheless, the great majority of missions flown during April, May, and June were directed against transportation centers and military concentrations behind the German lines in France, the Low Countries, and Germany west of the Rhine. For idealists of the theory of strategic bombing aimed at the enemy's sustaining war economy, these were dark days. Whatever progress had been made, they felt, was now being jeopardized, the Germans being given an opportunity to recuperate. Generals Eisenhower and Spaatz, much to their credit, held to a middle position between extremists of both sides, between those who would abandon, if they could, tactical support missions and those who urged that the *entire* air effort be used in direct support of the Ground Forces.

For Spaatz the only real question was how best to assure air superiority over the assault beaches. Patiently, and with imposing tact, he worked to convince Eisenhower that the answer lay in the destruction of the *Luftwaffe* in the battle in the air, and that the surest way to flush the German fighters out of hiding to face combat in the sky was to concentrate on the *Luftwaffe's* fuel supply. Late in April, Eisenhower gave Spaatz verbal permission to strike at German oil refineries when the weather over Germany was such as to promise good results from daylight visual bombing. The first such raid took place on 12 May, against targets located near Zwickau, Merseburg-Leuna, Brüx, Lützenkendorf, Böhlen, and other cities. "I shall never forget the date May 12," Albert Speer would later write.

On that day the technological war was decided. Until then we had managed to produce approximately as many weapons as the armed forces needed, in spite of their considerable losses. But with the attack of nine hundred and thirty-five daylight bombers of the American Eighth Air Force upon several fuel plants in central and eastern Germany, a new era in the air war began. It meant the end of German armaments production.¹

On 28 and 29 May, General Doolittle's Eighth Air Force conducted successful raids against synthetic oil plants deep in central Germany. General Twining's Fifteenth Air Force had been conducting similar attacks since April against oil targets around Ploesti and Vienna. Each of these raids proved costly in both crews and aircraft, but Spaatz's main contention proved out—the German Air Force rose with fury to repel, unsuccessfully, these attacks. The full extent of the German pilot losses was revealed to Reichsmarschal Goering in late

May when he was informed that the losses were critically in excess of the *Luftwaffe's* programmed replacement capacity. Like the attacks in February against aircraft production, the attacks in May against aviation fuel production seriously crippled, but did not destroy, a critical industry. Taken together, however, and far more important in view of the upcoming invasion, they did destroy the *Luftwaffe's* capability either to defend Germany or oppose the invasion.

On D-Day the German Air Force did not contest the landings at Normandy. The mission of the strategic air offensive, as defined at Casablanca and in the C.B.O. Plan, had been so to weaken Germany "as to permit initiation of combined operations on the Continent." This had been accomplished; the strategic air offensive, when measured against its assignment, had proved an unqualified success. All this is not to say that the transportation attacks during April and May were without effect in limiting the *Wehrmacht's* capability to redeploy forces in opposition to the landings at Normandy, an undeniably important consideration. What it *does* say, however, is that exclusive concentration on the transportation attacks would not have allowed successful achievement of the *air forces* mission—assured air superiority over the intended point of assault.

In Eisenhower's eyes General Spaatz's stature, always high, rose even higher. Two days after D-Day the supreme commander agreed that oil was now the number one priority. For the next three months Spaatz's bombers flew missions against oil targets whenever the weather permitted. Yet even as before the majority of sorties during the third quarter of 1944 were flown against targets less palatable to the air planners.

From June through August there were almost daily requests for bombing missions in direct support of the ground forces trying to break out from the lodgement at Normandy. Then V-1s started hitting London beginning on 12 June, followed by V-2s beginning in September, leading to urgently repeated requests to attack the launching sites. (The British, understandably, wanted the launching sites destroyed; but Air Marshal Harris of RAF Bomber Command, citing the greater accuracy of the American forces, insisted that the Eighth Air Force should take on such missions. General Spaatz, also understandably, was not pleased to have his arguments on accuracy thus turned back on him.)

It was Spaatz's fate throughout 1944 to have to contend with an almost limitless variety of ideas on how to use the bombers under his

command. As was his way, however, he was careful to keep his most phlegmatic comments to himself in an informal diary maintained in his office. At one point in June, after a conference at SHAEF, he wrote despairingly of Eisenhower's suggestion about using B-17s to drop supplies to partisans in southern France, and of "Leigh-Mallory and Monty, who visualize the best use of our tremendous air potential as plowing up several square miles of terrain in front of the ground forces to obtain a few miles of advance!" Despite the rapidly increasing numbers of available aircraft—more than 2,000 in RAF Bomber Command, more than 2,000 in the Eighth Air Force, more than 1,000 in the Fifteenth Air Force—there seemed always to be one obstacle or another to the hope of throwing the whole force over Germany for any considerable length of time; the promise of "Big Week" back in February seemed forever one step beyond reach.

From July through November, the Eighth Air Force, using "its rare days of freedom from commitments to help the land forces," pressed home the attack against the German oil industry.² During this period the ground armies broke loose from Normandy and swept across France, only to be halted short of the Rhine by logistical shortcomings. It is to the apparent stalemate that loomed on the horizon in October 1944 that one must look to understand how, in the last six months of the war, the strategic air forces moved further and further away from what had been their original goals; and how a club was fashioned from what had been intended as a sword.

With the failure of the effort to cross the Rhine during September, the overriding concern of all Allied planners became finding some way to bring sufficient force to bear on Germany to force a surrender. If the Rhine "proves sticky as a barrier," Spaatz wrote Arnold early in October, "it may still be possible to beat up the insides of Germany enough by air action to cause her to collapse next spring, particularly if the Russians continue pressure against the eastern area."³ Air leaders were not alone in suggesting that air action might be the answer to present difficulties. While on a visit to the European theater shortly thereafter, General Marshall...

had taken the initiative in formulating plans to bring about the defeat of Germany by 1 January 1945. The chief of staff in discussions with air leaders made it clear that he was not satisfied that full pressure had been put in the right places, and he suggested that long-range objectives of strategic bombard-

ment be abandoned for an all out effort to force an early victory.⁴

In the face of such suggestions emanating from the very pillar of authority, one should not be surprised that slowly, but nonetheless perceptibly, the American air forces drifted away from their intended precision attack, and came to meld their efforts with those of RAF Bomber Command in an effort to club Germany into surrender. Also affecting this trend, however, were operational factors.

As winter approached, the typically horrid flying weather over Germany returned. Yet by then the potential force available to USSTAF was so great, and the situation on the ground so disappointing, that it was unthinkable not to use the bombers simply because visual bombing was not possible. If Parkinson is right in holding that "work expands to fill the time available," a corollary might be suggested to the effect that "the degree of military force applied tends to expand to match the capability available." Whether or not valid in any general sense,⁵ this corollary does suggest what happened to the strategic air war between October 1944 and April 1945. To be sure, in most cases the targets selected for attack were still identified as those producing oil, aircraft, munitions, motor transport, and so forth. But the bombing techniques required by the cloud cover over most targets were in no sense capable of providing results in line with the American doctrine of precision bombardment. The official history, perhaps unconsciously, puts the case succinctly: "... radar bombing was better than no bombing."⁶

When Hitler launched his Ardennes Offensive in December 1944, the determination of the Allied commanders somehow, once and for all, to put an end to the war increased. Making matters worse was the appearance late in 1944 of jet aircraft among the German defensive fighter force. This development caused General Spaatz grave concern and added to his growing fear that the V-1 and V-2 weapons might represent only the beginning of a special bag of tricks that Hitler was preparing to employ.⁷ Wherever he looked, Spaatz had reason to feel that he would be remiss in his duty if he failed to launch every possible mission, regardless of weather conditions over the chosen target, and, yes, if it got to that, regardless of the precise detail in which were couched the target directives of the Combined Chiefs of Staff.⁸ And lest Spaatz fail to investigate every possibility

for the employment of his forces, General Arnold back in Washington reminded him that

We have a superiority of at least 5 to 1 now against Germany and yet, in spite of all our hopes, anticipations, dreams and plans, we have as yet not been able to capitalize to the extent which we should. We may not be able to force capitulation of the Germans by air attacks, but on the other hand, with this tremendous striking power, it would seem to me that we should get much better and much more decisive results than we are getting now.⁹

So despite the earnest intentions of Spaatz, Eaker, and Assistant Secretary Lovett, the Army Air Forces drifted toward a concerted attack against Germany that came more and more to be characterized by techniques reflecting "area" rather than "precision" attack. The attacks of 1945 against Dresden, Berlin, and the Ruhr industrial area cannot, afterthoughts to the contrary, be called precision attacks.¹⁰ Near the end of his account, one commentator on these events offered one explanation of what had happened during the closing months of the air war.

A force designed as a precision instrument had become one expressing the concept of total war. *This change had not been intentional* and the fact of the change taking place would certainly be denied by most senior American officers who held high command in these concluding months. But the record is against them. It is a record of industrial destruction, wrought during the course of an area offensive; it is not a record of industrial destruction as seen in the determination to bomb Schweinfurt or Regensburg or aircraft factories or oil installations or transport centres. As with most other aspects of the strategic air offensive, *it is probably the case that this change was inevitable*, certainly once strategic objectives became superseded by those derived from the doctrine of unconditional surrender. Perhaps all one can say is that nothing more aptly illustrates the near-impossibility of returning to strategic first principles once the pressure of events and changes [in] political circumstances have blunted or distorted them.¹¹

Hard words, these, and reflecting deep-seated fears. Their author, Anthony Verrier, is journalist first and historian second, and the precise application of some of his words—e.g., "area offensive," "As with most other aspects of the strategic air offensive," etc.—may be adjudged too strong in the particular circumstances of which he writes.¹² It is nonetheless true that Verrier's conclusions accord very

closely with those of the American historian Kent Roberts Greenfield: "The moral of Tolstoi's *War and Peace* was receiving a fresh illustration. The grim logic of war had taken it out of the hands of the men charged with its direction."¹³

The view taken by Verrier and Greenfield, whatever its degree of validity, owes much to hindsight. For those charged with executing the strategic air offensive, the past and present realities outweighed any philosophical contemplation of future implications. To be fair to them, it is perhaps appropriate to conclude this sketch of the final months of the air offensive with some thoughts of the late General (USAF, Ret.) C. P. Cabell upon reading an earlier version of these pages in 1969.

What was so wrong, in the light of the realities of German practices over the five years of war, in seeking the attainment of victory? The sooner it came the sooner would it stop the war with its greater slaughter of Allied soldiers and civilians, as well as enemy civilians and soldiers. There would be a net reduction in deaths. To me the test was whether or not our bombing was wanton. I do not think it was, in spite of many urgings by all kinds of people—not just the military—for all kinds of bombing operations. . . . And it was not a strain on us military folk to keep it that way.

As for the comment from Craven and Cate cited in note 6, this chapter, that the "only" justification for the experiments with radar bombing "was the assumption that blind bombing was better than no bombing," General Cabell wrote:

The 'only' justification!? What about the imperative to develop the equipment and techniques to use, *in battle*, radar bombing so as to make ours an all-weather force? This would be needed in Japan, in future wars, and even currently in the European Theater in the event that the German jet fighter should have materialized as feared.¹⁴

When Franklin D'Olier and his colleagues convened at Cologne on Easter Sunday, 1945, the strategic air offensive was drawing quickly to a close.¹⁵ The Rhine had been crossed the week before and General Eisenhower, in a press conference on 28 March, had described Germany as a "whipped enemy." Now on the verge of their most important work, the members of the Survey would not worry themselves with the sorts of questions raised in the preceding paragraphs. From a vantage point thirty years later, it may seem surprising that they concerned themselves so little with tracing, step

by step, the *trend* of air operations. Yet if one considers the way they prepared themselves, the extent of their knowledge, and the politically explosive nature of some of the questions they *might* have raised, then surprise gives way to understanding.

As shown in the preceding chapter, the Survey members from the beginning structured their approach so as to concentrate on the economic effects of bombing on industries, whether discrete or interlocking. This resulted not only from the background briefings they were given on the origins of the theory of precision bombing, but also from the decision to make the top ranking civilian industrial advisors the core of the executive committee of directors. A second reason why basic questions about the *control* of bomber forces would tend to be overlooked lay in the relative innocence of the civilian members on questions of operational techniques, matters of technical and tactical feasibility, and the day-to-day decisions that had to be made in the improvised¹⁶ air war. Whereas the Survey was in possession of copies of all the target directives, its members were, for the most part, unaware of how often these had had to be ignored. Some members, however, particularly among the military, could also see that the intricacies of the whole question of bombing policy presented questions and problems that might better be put aside for the present.

The reader will recall that as early as December 1944 Mr. D'Olier had sought to downgrade the emphasis given to criticism of any sort; establishing the factual effects of the bombing that had taken place was to be the sole concern of the Survey's lower echelons. Evaluating the effects and criticizing, if appropriate, were to be the province of the directors, vice-chairman, and chairman. By March of 1945, however, the trend of thinking at the topmost level of the Survey reflected an increasing unwillingness to broach the difficult, perhaps imponderable, questions of bombing policy. This thinking is clearly revealed in a letter of 22 March 1945 from Colonel Perera to General Kuter.

It is the opinion of the undersigned that the directives under which the Survey is operating confine its scope to the appraisal of the effects of strategic bombardment and do not include the evaluation of the effort, or the conduct of operations. While it may be difficult to draw a line between these three factors, the report of the Survey should consist solely of findings of fact bearing upon the first. These findings, in turn, will assist competent military authority in determining the principles

involved in the planning, mounting, and conducting of future strategic bombardment operations and in laying down the necessary procedures to achieve their adoption and smooth application. This task would not be performed by the Survey; it would have to be undertaken by the proper military authorities at some time subsequent to the submission of the report of the Survey to the Secretary of War. It is agreed by all connected with the Survey that it will not operate as an investigating committee, but as an impartial finder of facts bearing upon the effects of our strategic bombardment operations in Europe. The above views have been expressed by the undersigned to both the Chairman and the Vice Chairman who are in accord therewith.¹⁷

Unclouded by Colonel Perera's curious blend of legal and military jargon is the clear statement that the sort of forceful critique envisaged by General Fairchild would not be forthcoming. Yet in a very real sense, no approach other than that described by Perera could seriously have been considered by the Survey. They *knew* by March of 1945 that they were simply not qualified to undertake criticism of either the conduct or the control of operations. In the time remaining and with the skills available to them, they could make a real effort to gather facts and compile data. Then they could go one step further: they could seek to determine the effects of bombing on both particular and general elements of the German war economy. That far they could go, but no further; to attempt to do anything more would be to go beyond their own evaluation of their competence to judge in such matters.

Finally, there were considerations of a personal and political nature that would tend to place limits on the extent of the Survey's evaluation. Mr. D'Olier, after all, had been "given a job to do" by General Arnold and Assistant Secretary Lovett. That Secretary of War Stimson and the President had signed certain papers was beside the point; D'Olier knew as well as anyone else that the Joint Chiefs of Staff were running the American side of the war. And now that war, at least in Europe, was drawing to a victorious close and there was still the war in the Pacific to go. What would be served by producing a contentious or critical report, one that singled out errors and named names? Arnold, Spaatz, Eaker, Doolittle, and all the others—men whom D'Olier had come to admire for their courage and their willingness to shoulder enormous responsibility—these men had led the way; thousands of others had given their lives.

with selecting targets for a possible future war. By the 1950s, however, the increasing numbers and destructive power of weapons becoming available led to a general feeling among target planners that precision in the identification of discrete targets was of less concern than assured delivery of a weapon in the general vicinity of a target, as often as not an entire city. Later, during the bombing debates of the Vietnam era, the distortions of the Survey's principal findings by defenders and critics alike served to frustrate the rediscovered relevance of the Survey reports. These matters and others, including the possibility that new technology may once again make possible precise targeting against interlocking elements of an enemy economic system, are thoughtfully examined in John A. Lauder's "Lessons of the Strategic Bombing Survey for Contemporary Defense Policy," *Orbis*, 18, 3 (Fall 1974), pp. 770-90.

And yet in one respect, surely, the directors of the Survey were successful: they wrote the Domesday Book on strategic air warfare in World War II. Perhaps it is not too much to hope that future historians using those reports will find in these pages the answers to some questions that might otherwise have puzzled them.

Notes to Pages 1-4

NOTES CHAPTER ONE

1. After Princeton he joined his father's business, later named Franklin D'Olier and Company, Inc., serving as president and treasurer until 1926. In addition to rising to the top of the Prudential Company, he was a director of five other corporations: The Pennsylvania Railroad, National Biscuit Company, General Refractories Company, the Morristown Trust Company, and the Howard Savings Institution of Newark.

2. "There was, in short, a general belief among the higher authorities assembled at Quebec [the OCTAGON Conference, September 1944] that German surrender could come within a matter of weeks or even days." See the discussion of this point in Robert E. Sherwood, *Roosevelt and Hopkins: An Intimate History* (New York: Harper & Brothers, 1950), pp. 817-818. For evidence that such optimism was shared in places closer to the actual battle, see Forrest C. Pogue, *The Supreme Command* (Washington: Office of the Chief of Military History, 1954), pp. 244-45, 307-10.

3. Born in Vienna of American parents, 19 September 1895; A.B., Williams, 1917; combat pilot with the Army Air Service in World War I; vice-president of Viotor Common & Company, Buffalo, New York, 1920-1933; partner in Laurence M. Marks & Company, New York City, 1933-1941.

4. A copy of General Arnold's letter is reproduced in Beveridge, Vol. 2, frames 974-75.

5. A copy of the President's letter is reproduced in Beveridge, Vol. 2, frame 973.

6. The remainder of this chapter, intended to provide a general background for the lay reader, is necessarily very selective and brings to mind a sentence from Vannevar Bush's *Modern Arms and Free Men*: "We examine in order to see trends, and shall omit much."

7. Actually, the first American bombing mission into Axis-occupied Europe

Strategic Bombing in World War Two

h selecting targets for a possible future war. By the 1950s, however, increasing numbers and destructive power of weapons becoming available led to a general feeling among target planners that precision the identification of discrete targets was of less concern than assured delivery of a weapon in the general vicinity of a target, as in as not an entire city. Later, during the bombing debates of the Vietnam era, the distortions of the Survey's principal findings by defenders and critics alike served to frustrate the rediscovered advance of the Survey reports. These matters and others, including possibility that new technology may once again make possible precise targeting against interlocking elements of an enemy economic system, are thoughtfully examined in John A. Lauder's "Lessons of the Strategic Bombing Survey for Contemporary Defense Policy," *Orbis*, 18, 3 (Fall 1974), pp. 770-90. And yet in one respect, surely, the directors of the Survey were successful: they wrote the Domesday Book on strategic air warfare in World War II. Perhaps it is not too much to hope that future historians using those reports will find in these pages the answers to the questions that might otherwise have puzzled them.

Notes to Pages 1-4

NOTES

CHAPTER ONE

1. After Princeton he joined his father's business, later named Franklin D'Olier and Company, Inc., serving as president and treasurer until 1926. In addition to rising to the top of the Prudential Company, he was a director of five other corporations: The Pennsylvania Railroad, National Biscuit Company, General Refractories Company, the Morristown Trust Company, and the Howard Savings Institution of Newark.

2. "There was, in short, a general belief among the higher authorities assembled at Quebec [the OCTAGON Conference, September 1944] that German surrender could come within a matter of weeks or even days." See the discussion of this point in Robert E. Sherwood, *Roosevelt and Hopkins: An Intimate History* (New York: Harper & Brothers, 1950), pp. 817-818. For evidence that such optimism was shared in places closer to the actual battle, see Forrest C. Pogue, *The Supreme Command* (Washington: Office of the Chief of Military History, 1954), pp. 244-45, 307-10.

3. Born in Vienna of American parents, 19 September 1895; A.B., Williams, 1917; combat pilot with the Army Air Service in World War I; vice-president of Viotor Common & Company, Buffalo, New York, 1920-1933; partner in Laurence M. Marks & Company, New York City, 1933-1941.

4. A copy of General Arnold's letter is reproduced in Beveridge, Vol. 2, frames 974-75.

5. A copy of the President's letter is reproduced in Beveridge, Vol. 2, frame 973.

6. The remainder of this chapter, intended to provide a general background for the lay reader, is necessarily very selective and brings to mind a sentence from Vannevar Bush's *Modern Arms and Free Men*: "We examine in order to see trends, and shall omit much."

7. Actually, the first American bombing mission into Axis-occupied Europe

occurred on 12 June 1942 when twelve B-24s took off from Fayid, Egypt, to attack the oil refineries around Ploesti, Rumania. Craven and Cate, s 341-42; 2, 9-13. A detailed account of this extraordinary adventure is contained in the opening pages of James Dugan and Carroll Stewart, *Ploesti: The Great Ground-Air Battle of 1 August 1943* (New York: Random House, 1962).

8. New York, Macmillan, 1908. Though taking second place to none in imaginative fancy, Wells had many precursors. The title of Air Marshal Sir John Slessor's memoirs was taken from Tennyson's lines in "Locksley Hall" (1842):

"Heard the heavens fill with shouting, and there rained a ghastly Dew
From the nations' airy navies grappling in the central blue."

And Gray's "Luna Habitabilis" (1737) feared:

"The time will come, when thou shalt lift thine eyes
To watch a long-drawn battle in the skies,
While aged peasants, too amazed for words,
Stare at the flying fleets of wond'rous birds."

For "The Idea of Flight in the Middle Ages," see Chapter I of M.J. Bernard Davy's *Air Power and Civilization* (London: George Allen & Unwin, Ltd., 1941), or Beril Becker's *Dreams and Realities of the Conquest of the Skies* (New York: Atheneum, 1967).

9. An evaluation unlikely to inspire universal assent, yet one thought valid by the present writer. On the level of the spectacular, there is little debate; on the level of increasing importance, one must consider *all* aspects of aviation and such effects on armies as ordering troop movements at night to avoid observation by enemy airplanes; largely unessential implies a judgment that the course of the war *as a whole* was not affected one way or the other.

10. The definitive account of the German bombing raids against England is Major (USAF) Raymond H. Fredette's *The Sky on Fire* (New York: Holt, Rinehart, and Winston, 1966). The basic history of British military aviation during the war is W. Raleigh and H. A. Jones, *The War in the Air*, 6 vols. (Oxford: The Clarendon Press, 1922-37); for the operations of the Independent Force, see 6, pp. 118-74, and Alan Morris, *First of the Many: The Story of the Independent Force, RAF* (London: Jarrolds, 1968). The best book on American aviation in World War I is I. B. Holley, Jr., *Ideas and Weapons: Exploitation of the Aerial Weapon by the United States in World War I* (Yale University Press, 1953); supplement Holley with James J. Hudson, *Hostile Skies: A Combat History of the American Air Service in World War I* (Syracuse University Press, 1968). A recent general account is Aaron Norman, *The Great Air War* (New York: Macmillan, 1968). A valuable bibliography for the period 1899 to 1918 is contained in the footnotes to Chapters 2, 3, and 4 of George H. Quester, *Deterrence Before Hiroshima* (New York: John Wiley & Sons, Inc., 1966), an otherwise unremarkable book.

11. For a short account of the background and significance of the Smuts Memorandum, see Noble Frankland, *The Bombing Offensive Against Germany* (London: Faber and Faber, 1965), pp. 21-46. The text of the memorandum is in H. A. Jones, *The War in the Air*, Volume of Appendices, pp. 8-14. For evidence that Smuts was not the first to suggest an independent and separate air service, see Fredette, *The Sky on Fire*, pp. 83, 112-113.

12. Common usage at the present time identifies these four roles as follows: reconnaissance, tactical, strategic, and air defense.

13. The best book on Mitchell is Colonel (then Major, USAF) Alfred F. Hurley's *Billy Mitchell: Crusader for Air Power* (New York: Franklin Watts, 1964; new edition, Indiana University Press, 1975).

14. Hereafter, and with apologies to Liddell Hart, without quotation marks. For the views of a critic on the origin of the term strategic bombing, see Kent Roberts Greenfield, *American Strategy in World War II: A Reconsideration* (Baltimore: The Johns Hopkins Press, 1963), p. 88. Events in Vietnam only further confounded the semantic problem, B-52s (strategic bombers) flying "tactical" missions south of the DMZ and F-105s (tactical fighter-bombers) having flown against "strategic" targets in North Vietnam. For some observations on the "vocabulary from which on the basis of observed usage the grammar of air power may eventually be compiled," see Noble Frankland, *The Bombing Offensive Against Germany*, pp. 16-17.

15. In 1926 Congress advanced the status of the Army's air arm from that of a *Service* to that of a *Corps*. The Tactical School grew in size and five years later moved to new quarters at Maxwell Field near Montgomery, Alabama.

16. Then so called. Today the term "fighter aircraft" is more common, but tends to disguise the essential differences required by varying missions, *e.g.*, defensive fighter or interceptor, tactical support fighter-bomber, and escort fighter.

17. In a conceptual sense the theory was well established as early as 1934.

18. For some of the difficulties to be encountered in any attempt to unravel the threads of theoretical development at ACTS, see the remarks of Major (USAF) Perry M. Smith in his article, "Douhet and Mitchell: Some Reappraisals," *Air University Review*, 18, 6 (Sep-Oct 1967), pp. 97-101.

19. English translations by Dino Ferrari (New York: Coward-McCann, 1942) and Sheila Fischer (Rome: Revista Aeronautica, 1958). The 1921 version modified some of Douhet's earlier views. The best short introduction to Douhet is Bernard Brodie, *Strategy in the Missile Age* (Princeton University Press, 1965; c. 1959 by the RAND Corporation), Chapter 3, "The Heritage of Douhet."

20. See Raymond R. Flugel, "United States Air Power Doctrine: A Study of the Influence of William Mitchell and Giulio Douhet at the Air Corps Tactical School, 1921-1935" (unpublished Ph.D. dissertation, University of Oklahoma, 1965). Also important are: Frank J. Cappelluti, "The Life and Thought of Giulio Douhet"

(unpublished Ph.D. dissertation, Rutgers University, 1967); and J. L. Boone Atkinson, "Italian Influence on the Origins of the American Concept of Strategic Bombardment," *Air Power Historian*, 4, 3 (July 1957), pp. 141-49.

21. In an interview at the USAF Academy, Colorado, in September 1968, General (USAF, Ret.) Carl A. Spaatz concurred in this view.

22. See the following: Robert T. Finney, *History of the Air Corps Tactical School, 1920-1940* (Maxwell AFB, Alabama: USAF Historical Study No. 100, 1955); Thomas H. Greer, *The Development of Air Doctrine in the Army Air Arm, 1917-1941* (Maxwell AFB, Alabama: USAF Historical Study No. 59, 1955); James L. Cate, "Development of Air Doctrine, 1917-1941," *Air University Quarterly Review*, 1 (Winter 1947), pp. 11-22; Craven and Cate, Vol. 1, Chapter 2, "The Army Air Arm Between Two Wars, 1919-1939;" and Chapter 3 of Major (USAF) Perry M. Smith, "War-time Planning for Postwar Contingencies: The Army Air Force Example, 1943-1945" (unpublished Ph.D. dissertation, Columbia, 1967). Also valuable is Major General (USAF, Ret.) Haywood S. Hansell, Jr., "American Air Power in World War II," (an unpublished, book-length (467 pp.) manuscript in the Hansell Collection, USAF Academy Library), Chapter 2, pp. 10-18, 24-26. General Hansell was at the Tactical School, first as student and then as instructor, from 1933 to 1938.

23. For aircraft development during this period see Robert W. Krauskopf, "The Army and the Strategic Bomber, 1930-1939," *Military Affairs*, 22 (Summer 1958), pp. 83-94 and Colonel George V. Fagan et al., "The Strategic Bomber," *Air University Quarterly Review*, 8, 1 (Summer 1955), pp. 89-137. The latter article is illustrated and gives brief histories of the Boeing B-17 "Flying Fortress," the Consolidated-Vultee B-24 "Liberator," and the Boeing B-29 "Superfortress"—the three United States strategic bombers in World War II. A chart on pages 134-135 gives for each aircraft: its power plant type, number, and horsepower; maximum speed; service ceiling; maximum range; dimensions; gross weight; armament; and standard crew composition.

24. "Notes for a Lecture on the Development of the U.S. Concept of Bombardment Operations," Feb 51, in the Hansell Collection.

25. See, for example, Mark S. Watson, *Chief of Staff: Pre-war Plans and Programs* (Washington: Historical Division, Department of the Army, 1950), pp. 44-47, 100-01, 126-47, 278-98, 408-10; Sherwood, *Roosevelt and Hopkins*, p. 564; Forrest C. Pogue, *George C. Marshall: Ordeal and Hope, 1939-1942* (New York: The Viking Press, 1966), pp. 48-50, 64-70, 202-03, 290-92. In an interview at the USAF Academy on 7 June 1965, Major General (USAF, Ret.) Haywood S. Hansell, Jr., a principal architect of AWP-1 (below), stated categorically that "General Marshall was the real founder of American air power. He could have stopped AWP-1 cold, but he didn't."

26. Ltr, General (USAF, Ret.) C. P. Cabell to the author, 2 Apr 69. General Cabell's authority for making such a statement will become clear in pages that follow.

For the working relationship between Arnold and Marshall, see Pogue, *Marshall, 1939-1942*, pp. 84-87.

27. See the report by Sir R. Lindsay of a conversation with the President, 19Sep38, in *Documents on British Foreign Policy, 1919-1939*, Third Series, Vol. 7 (London: H.M.S.O., 1954), pp. 627-29, esp. para. 12.

28. "The word from the top" filtered down not only from General Arnold's office; Harry Hopkins on a number of occasions provided an even more direct route. Interview with General Hansell, 7June65.

29. On AWP-1, see the history of the plan by one of its authors, Major General (USAF, Ret.) Haywood S. Hansell, Jr., *The Air Plan that Defeated Hitler* (Atlanta, Georgia: Higgins-McArthur/Longino & Porter, 1972). For a capsule account, Craven and Cate, 1, 131-32, 145-50; for AWP-1 in the context of overall War Department planning, Ray S. Cline, *Washington Command Post: The Operations Division* (Washington: Office of the Chief of Military History, 1951), pp. 60-61.

30. See Craven and Cate, Vol. 1, Chapter 17, "Establishment of the Eighth Air Force in the United Kingdom."

31. Webster and Frankland, Vol. 1, is indispensable on all matters pertaining to RAF Bomber Command. For the best short treatment, see the opening chapter of Martin Middlebrook's *The Nuremberg Raid* (New York: William Morrow, 1974), which, despite the limitations implied by its title, is the best single-volume account of Bomber Command yet to appear.

32. This problem continued for some time. "I cannot state too strongly the importance of training for this Theater in the United States. This is a hell of a poor place to train. If the weather permits flying we go on an operational mission. If it doesn't, you can't train anyway. That certainly is learning the hard way." Ltr, Brigadier General Haywood S. Hansell, Jr., commander, First Bombardment Wing, to Major General Muir S. Fairchild, 11Feb43, in Hansell Collection.

33. See Craven and Cate, 1, Chapter 9, "The Casablanca Directive." The last sentence of the quotation, stating specifically that the purpose of the offensive was to make possible an invasion, is not quoted in Craven and Cate and was apparently added to the statement sometime after April 1943, for reasons that are obscure at best (ltr, Major General Haywood S. Hansell, Jr., to the author, 24Aug75). The version in Webster and Frankland, 4, 273, includes the sentence in question.

34. See Craven and Cate, 2, Chapter 8, "The War Against the Sub Pens."

35. Craven and Cate, 2, 317, 322.

36. Reproduced in full in Webster and Frankland, 4, 273-83. Its full title was "Combined Bomber Offensive Plan (Operation POINTBLANK)."

37. The COA and Advisory Council are treated in Chapter 2.

38. Although looked upon by some airmen as "diversionary" targets, "the submarine facilities were selected without coercion, essentially as being good targets for on-the-job training and for the testing of tactics, while at the same time

performing a function that would please the Navy Members of the Combined Chiefs of Staff and so predispose them to favor the plan. . . . The submarine targets were consistent with our recognition that preservation of the U. K. as a base for all future attacks against Germany was an essential. The submarines also fitted in with Arnold's *continuing* battle in Washington to prevent the diversion of the heavies to Pacific patrol duties. We planners of the C. B. O. were very conscious of this Navy position." Ltr, General (USAF, Ret.) C. P. Cabell to the author, 2Apr69.

39. Thought to be concentrated in a few plants and absolutely vital to the aircraft industry.

40. Para. 3 (a), C.B.O. Plan (italics in original).

41. For the preceding two paragraphs, see Craven and Cate, 2, Chapter 20, "Pointblank."

42. See Craven and Cate, 2, Chapter 21, Autumn Crisis," and 3, Chapter 1, "Winter Bombing."

43. Webster and Frankland, 2, 190-211.

44. Bernard L. Boylan, *Development of the Long-range Escort Fighter* (Maxwell AFB, Alabama: USAF Historical Study #136, 1955); William R. Emerson, *Operation Pointblank: A Tale of Bombers and Fighters* (USAF Academy: Harmon Memorial Lecture in Military History #4, 1962).

45. The fighter pilots had another reason for wanting to get further away from the bombers. "My pilots report that they are still being fired on by Fortresses. This does not make the fighters' task easy, particularly when they are at the same time being heavily engaged by the Hun. I hope, therefore, that something can be done to improve the standard of aircraft recognition among bomber crews." Ltr, Air Vice-Marshal H. W. L. Saunders, air officer commanding No. 11 Group (RAF) to Brigadier General Newton Longfellow, commander, Eighth Bomber Command, 15May43, in Hansell Collection.

46. See Craven and Cate, 3, Chapter 2, "Big Week."

47. Participants in the great debate revolving around the Oil Plan v. the Rail Plan (the latter also known variously as the Transportation Plan, the Tedder Plan, the Zuckerman Plan, the Leigh-Mallory Plan) have convinced me that no matter was more fiercely contested in the field of air strategy than this one. Accounts left by participants on either side of the issue have colored virtually all subsequent accounts. With the notable exception of Webster and Frankland (3, 22-24), for example, most British accounts fail to treat General Spaatz's position either adequately or fairly. Two prominent examples of uninformed accounts may be found in: John Ehrman, *Grand Strategy*, Vol. 5 (London: H. M. S. O., 1956), pp. 286-304; and R. W. Thompson, *The Price of Victory* (London: Constable, 1960), pp. 123-38. By the same token, it is probably fair to assume that General Spaatz was more concerned with the number of German aircraft that might show up on D-Day than he was with the

number of German railway trains that might put in an appearance. In a letter to the author (2Jul69), General (USAF, Ret.) C. P. Cabell recalled that "the oil attacks, as contrasted to the rail attacks, would serve two purposes: (1) Germany proper would be on the receiving end, and (2) the oil attacks would affect not only the German Air Force, but the economy as a whole and its ability to support the German surface forces." When I pointed out to General Cabell that this argument, if read in a particular light, could be taken to parallel Air Marshal Harris's idea that the bombers simply should not be diverted from targets in Germany, for *any* reason, I almost lost a friend.

48. The author is indebted to the late General (USAF, Ret.) C. P. Cabell for help with the preceding paragraphs. As senior member of General Arnold's Advisory Council, General (then Colonel) Cabell had helped write the C.B.O. Plan. Later, from December 1943 to February 1944, he commanded the Forty-fifth Heavy Bombardment Wing. From February to July 1944 he was on the staff at USSTAF where he became Director of Plans on 1 April 1944.

enemy population centers.⁵⁸

By 23 July, D'Olier and Nitze had rejoined the other active directors in Europe. There they remained for another month, supervising the compilation of the chairman's final report and preparing to transfer their activities to Japan. Early in July, upon his return from a tour in the Pacific theater, General Arnold had pressed D'Olier to agree to conduct a similar autopsy of bombing results in Japan. Insisting that General MacArthur and Admiral Nimitz were sold on the idea, Arnold's persuasive powers prevailed once again, D'Olier telling Alexander on 6 July that "it looks very much, Henry, as if we will have to say yes to General Arnold." From then until early September, the Survey in Europe worked night and day finishing reports, transferring much of the writing activity to Washington and New York, and deciding who would continue on the job in Japan and who would be released from further involvement.⁵⁹

CHAPTER SIX

A CHANGE OF SCENE: FIRE, ATOMIC BOMBS, AND THE GREAT ANDERSON-NAVY WAR

A Fiendish Proposition: The Richmond *Whig* proposes to hire incendiaries to set fire to New York, Philadelphia, Boston, Chicago, Pittsburg and other principal cities of the North. It assumes that this piece of vandalism could be accomplished for a cash outlay of a million of dollars, without risk or hazard. . . . This mode of warfare, the *Whig* thinks, would be perfectly "justifiable, legitimate, and right." That the scoundrels are capable of wishing to achieve such a result we have no doubt, but there are difficulties in the way which will deter them from undertaking it. The suggestion, however, shows their desperation and foreshadows their weakness.

Weekly Times, Newburgh, N.Y.
15 April 1864

Aerial incendiaries probably caused as much death and destruction as any other weapon used in World War II.

Chemicals in Combat, a volume
of the official history of the
Chemical Warfare Service

I am eager to hear about your peregrinations in the Pacific Ocean areas, including, of course, the great Anderson-Navy war.

Edward Mead Earle to Orvil A. Anderson,
16 February 1946

The strategic air war against Japan had gotten underway on 15 June 1944 when some fifty B-29s, flying from bases in China, attacked the Imperial Iron and Steel works at Yawata. The first,

major problem associated with attacks on Japan had been that of conquering the immense distances involved. The availability of England as a base had made possible the bombing of Germany with aircraft designed and built several years before the war. It had been 1939, however, before plans were laid for the design of a Very Long Range (VLR) bomber capable of attacking targets at a range of 1,500-2,000 miles. The resulting B-29, although originally intended for use over Europe, had by late 1943 been designated the primary aircraft to be used in long-range attacks against Japan from bases in China.¹

Early in 1944, five bases were constructed in southern Bengal, some sixty miles from Calcutta; at the same time construction of forward bases near Chengtu, China, was begun. From the Chengtu bases it was possible to reach only Kyushu, southernmost of the Japanese home islands. For this reason it was soon determined that the operations out of China would only be preliminary to the main campaign—that to be launched from bases in the Mariana Islands, to be invaded in mid-summer of 1944. To conduct these operations, the JCS established the Twentieth Air Force, to be made up of the XX Bomber Command (China) and the XXI Bomber Command (Saipan, Tinian, and Guam in the Marianas). To avoid getting entangled in the MacArthur-Nimitz struggle for supremacy in the Pacific—as well as to avoid either ground or naval operational control of the bombers—General Arnold got the JCS to agree that they would take on themselves the authority for controlling the Twentieth Air Force, with Arnold acting as their “agent.”²

From the beginning, operations from the China bases proved difficult. The main problem was that of logistics, since it took ten gallons of aviation gasoline to deliver one gallon over “the Hump” from India to the Chengtu airfields. Those missions that were flown had indecisive effects and were valuable primarily for training crews and breaking in aircraft. It was not really until November 1944, from bases hurriedly constructed in the Marianas, that the campaign against Japan got underway with any regularity.³

Placed in command of XXI Bomber Command in the Marianas was Brigadier General Haywood S. “Possum” Hansell, one of the most experienced air planners and formerly the commander of a heavy bomber wing in the United Kingdom.⁴ A formulator of and true believer in the theory of high altitude daylight precision bombing, Hansell was pleased to find that his initial target directive from

the JCS listed aircraft production and repair facilities as first priority. On 24 November he sent his bombers on their first mission to Japan, the specific target being an aircraft plant in the northwest part of Tokyo.

The results of the first mission, like those of most precision attacks in the coming months, were not totally satisfactory. The main difficulties arose from a combination of crew inexperience, operating the aircraft at extreme range limits, and—worst of all—atmospheric conditions over the target areas. Cloud cover over targets was no new problem to the AAF; they had lived with it for more than two years over Germany. The problem in Japan, however, was compounded by the extreme wind velocities—up to 200 knots—encountered at 25,000-30,000 feet, the normal pre-planned bombing altitudes. Trying to fly in tight, self-defending formations in such winds proved almost impossible; worse, if the formation succeeded in reaching the target,

drift was difficult to correct and bomb runs had to be charted directly upwind or downwind. Attacking Japan's best-defended cities directly in the teeth of a 200-knot wind was unthinkable; going downwind the B-29's reached ground speeds in excess of 500 miles per hour, in which case neither bombsights nor bombardiers could function properly. Moreover, the high winds made it impossible for crews to make a second pass if the run-in failed; if a navigational error brought a plane in downwind from target it might not be able to attack at all.⁵

Early in January, impatient over the results thus far achieved, General Arnold replaced General Hansell with Major General Curtis E. LeMay, a hard-driving, battle-tested, and ruthlessly logical European veteran, whose XX Bomber Command (China) was closing down operations. Despite Hansell's close association with high level planning throughout the war, he had made the pragmatic error of not recognizing that a basic change of attitude had taken place in Washington. This change reflected a growing hope, primarily among airmen, that some way might be found to bring sufficient pressure to bear to force a Japanese surrender, if possible before the planned invasion.

The comparative centralization of Japanese industries in a few major cities, the high proportion of wooden and other inflammable building materials, the disappointing results of precision attacks,⁶

the determination to subject the Japanese nation to the maximum possible destruction (a determination encouraged to some degree by a feeling among many that the "Japs," as compared to the Germans, had less call on whatever humanitarian instincts might manage to survive in an atmosphere of total war)⁷—all these factors combined to produce a situation ripe for the introduction of a new tactical theory of employment. It was to be almost two months, nonetheless, before the new tactics were initiated in full. General LeMay's first missions followed the general pattern begun by Hansell, deviating only to conduct experiments with various types and loadings of incendiary bombs.⁸ Not until the night of 9/10 March 1945 did LeMay send out the first massive night incendiary raid.

On that mission 334 B-29s took off carrying a total bomb load of some 2,000 tons. The average load per plane was closer to six tons than the three it had normally been; this was made possible by LeMay's decision to strip the planes of their defensive weapons and ammunition and to bring the planes in over the target at altitudes varying from 4,900 to 9,200 feet. Both of these changes were severe tactical gambles, but the savings in fuel consumption and the element of surprise—coming in at low level and under cover of darkness—were thought worth the risk. The area attacked was a rectangle measuring approximately four by three miles of the most built up part of Tokyo. The results exceeded all expectations. Almost sixteen square miles of the city had been burned out, including 18 percent of the industrial area, 63 percent of the commercial area, and the heart of the residential district; 267,171 buildings were destroyed; 1,008,005 persons were rendered homeless; 83,793 people were killed; and 40,918 wounded.⁹

The Tokyo fire raid, the most devastating air attack in history, not excluding the attacks on Hiroshima and Nagasaki, became the pattern for most of the remaining operations of the XXI Bomber Command.¹⁰ By 14 August, the final mission, sixty-six cities and towns had been fire-bombed. As the Survey was to find, the effects of the attacks on the Japanese government had been profound; although the "peace movement" in the Cabinet dated back as far as July 1944, its leading spokesmen accelerated their efforts after the fire raids began. In the end it took the two atomic bombs of 6 and 9 August to break the deadlock, but there can be little question that even without the atomic bombs the Japanese government would have sued for peace prior to the home islands' being invaded.¹¹

The success, in a destructive sense, of the incendiary raids on Japan marked the ultimate demise of the prewar theory of precision bombardment, a theory characterized throughout by a tendency for the wish to become father to the thought. Once again the grim logic of war had prevailed over those who sought to find some surgically precise method for the application of force. After the war there would be much hand-wringing and remorse over the results; indeed, even within the Survey itself were many who devoutly wished that victory might have been achieved in some other way.¹² Those of us thirty years later should rejoice that men felt and continue to feel that way. But we should at the same time be wary of criticizing those who were charged with the direction of events. Those men had not our perspective; instead, they had a war to win and the sooner the better. Their political leadership had determined upon unconditional surrender and it was their task to bring that goal to fruition with the least number of *Allied* casualties. The present writer, whose memory of those days is fairly dim in many respects, remembers one thing vividly: had any Allied commander been found guilty of bringing less than the total possible force to bear on the enemy, thereby to shorten the war and "bring the boys back home," he would have been well advised not to appear unprotected on Main Street, U. S. A.¹³

Upon its redeployment to the Pacific theater, the Survey found itself with a task that resembled only on the surface its work in Europe. In the first place, the *scale* of attack (measured in terms either of tonnage dropped, missions flown, or places attacked) was considerably smaller. Compared to the almost 2,700,000 tons dropped over Europe (of which 1,360,000 were dropped within Germany's borders), the total tonnage of bombs expended in the Pacific was only 656,400, of which some 161,377 tons (24 percent) fell on the Japanese home islands. And of the total bomb tonnage dropped on Japan, less than 22 percent was directed at specific industrial (precision) targets.¹⁴ Also different was the greatly increased *rate* of attack, the majority of the effort being concentrated in the five months of March to July 1945. Another major difference was that President Truman's letter to Mr. D'Olier of 15 August 1945, formally inviting the Survey to evaluate bombing in the Pacific theater, specified that the study should include "the effects of all types of air attack." By this it was meant that the Survey would investigate the Navy's participation as well as that of the Army, and tactical as

wrong at worst.

The Survey's comments about many prewar assumptions that proved wanting in the test of battle were essentially unnecessary. No one, for example, needed to be reminded that unescorted bomber formations had suffered unacceptable losses. By the same token, the airmen themselves had come to realize that enemy civilian morale could be affected decisively only when the extent and weight of attack reached proportions altogether unacceptable to the humanitarian instincts of the governments and peoples the bombers were *defending*. Similarly, the airmen themselves learned that their prewar bombing experiments—primarily aiming single bombs at X's drawn on the ground—had failed to provide any really useful data about bomb effects on various types of structures. Nor did the airmen need to be reminded that prewar intelligence about potential enemies had proved hopelessly inadequate; with or without the Survey's recommendations, the CIA, or some similar organization, was bound to be created.⁹

In one respect, however, the Survey told the airmen something that needed to be said and said loudly, both to airmen—congenitally aggressive optimists—and to politicians—often unembarrassed by any precise knowledge of air warfare. This was that decisive results can be expected only when bombing attacks are repeated, sustained, and heavy. Events since 1945 have shown that this lesson of World War II needs repeatedly to be drawn lest modern air forces, anxious to perform tasks allotted to them, fall into the same error of expecting too much from sporadic attacks.¹⁰ In recent years two former members of the Survey have, with varying success, done their best at the highest levels of government to make this point.

During the Cuban Missile Crisis of 1962, Undersecretary of State George Ball was the first among the top advisors to come out wholeheartedly against the idea of responding by means of a "surgical air strike" aimed at destroying the missile sites in Cuba. Later, in 1965 and 1966, his dismay over President Johnson's decisions to set in motion the limited bombing of North Vietnam was partly responsible for his resignation. Still later, during the agonizing that preceded the bombing halt of March 1968, both Ball—"Ol' stop-the-bombing George," as he is reputed to have been called by the President—and Paul Nitze, then deputy secretary of defense, played major roles in bringing about the education of Secretary of Defense

Clark Clifford.¹¹

Nitze (and Ball, too, for that matter) had argued as early as 1961 against the "limited commitment" of U.S. combat troops to Vietnam. His point was that in war it is not possible to be "a little bit pregnant;" that to commit any ground troops at all meant, in the end, to commit as many as might be needed to ensure the security of those already committed. Again, in 1965, he took the same stand, arguing that any such commitment of troops tended to be open-ended. As for the decision early in 1965 to bomb North Vietnam's industrial and communications network, while avoiding Hanoi and other population centers, Nitze

drew on his experience as a member of the... Strategic Bombing Surveys. The surveys showed that in both Japan and Germany production and morale tended actually to improve while bombing was limited. Production declined and morale began to disintegrate only after the really brutal—and morally repugnant—bombing of population centers began.¹²

One question raised at the beginning of this chapter remains to be answered—To what use was put the work of the Survey? This question was preceded by an intimation that the reports of the Survey were, on the whole, ignored, at least in part because they made for something less than pleasant or inspirational reading.¹³ That, however, was only a part of the reason and not the main part. If my contention—that the reports of the Survey, especially their military applicability, have been largely ignored—is correct, then the real reason has nothing whatsoever to do with their intrinsic value. Rather, it has to do with the appearance in 1945 of nuclear weapons. Put succinctly, the atomic bombs had the effect of turning the Survey's reports into instant ancient history in the minds of most people, whether military officers or civilians.

On the very day that the first of the Survey reports was released to the public, John O'Donnell's column in the *Washington Times Herald* mentioned the Survey and how its report *might* have been important in future debates over air strategy.

What might have become a good old fashioned row now becomes an academic discussion thanks to the atom bomb. Come the next war, there will be no fleets of bombers pouring down death on civilian populations. Just one little atom bomb will do the work of a thousand blockbusters.

This attitude—that the Survey reports treated of matters not applicable to the future—was shared by officers of the highest rank. In October 1968, the present writer had the opportunity to discuss this matter with General Spaatz. He responded by relating the reaction of General MacArthur to the news, brought by Spaatz to Manila on 1 August 1945, that an atomic weapon had been built and would shortly be employed. Upon explaining the weapon's apparent capabilities to MacArthur, Spaatz went on, "General MacArthur said, 'Well, this changes warfare!'" Speaking then to his own feelings in the immediate postwar years, General Spaatz made it clear that virtually all senior airmen shared MacArthur's initial reaction and, as a consequence, lost interest almost immediately in the detailed findings of the Strategic Bombing Survey.

In one sense both the columnist and the generals were correct; the atomic bombs did change at least the parameters within which air warfare has since been conducted. Their assumption that great fleets of bombers dropping conventional weapons on industrial and population centers had become a thing of the past was an assumption that held valid for more than a quarter century. (It is still too early to speculate seriously on the significance of Operation LINEBACKER II, over Hanoi in December of 1972, as it may relate to the future of air warfare.) Where the error came, however, was in the emphasis given to atomic weapons to the exclusion of all others, and in the inability—so widespread as to be pervasive—to conceive of any form of future warfare in which aircraft armed with conventional weapons would attack targets and structures not unlike those attacked during World War II. The result of this error—a hard word and owing its force altogether to hindsight—was that a number of lessons were forgotten and had to be relearned in Korea and Vietnam. But then this is one of the central themes (ironies?) of the history of military affairs—what is remembered from the previous war usually turns out to be irrelevant in the next, what is forgotten or ignored costs lives and treasure.

For all this, the Survey reports were not entirely ignored, at least among academics and those interested in special topics on which the reports provided useful data. In the years following the war, a number of books appeared that relied heavily on information gathered by the Survey. Among them were a number of studies of a highly specialized nature, of which some of the better known are: Irving L. Janis, *Air War and Emotional Stress: Psychological*

Studies of Bombing and Civilian Defense,¹⁴ Fred Charles Iklé, *The Social Impact of Bomb Destruction*,¹⁵ Alexander H. Leighton, *Human Relations in a Changing World: Observations on the Use of the Social Sciences*,¹⁶ Burton H. Klein, *Germany's Economic Preparations for War*,¹⁷ Alan S. Milward, *The German Economy at War*,¹⁸ Jerome B. Cohen, *Japan's Economy in War and Reconstruction*,¹⁹ and Horatio Bond, ed., *Fire and the Air War*.²⁰ Containing perhaps the most thorough analysis of the internal consistency of the Survey reports is *Impact of Air Attack in World War II: Selected Data for Civil Defense Planning*, a nine-part report prepared for the Federal Civil Defense Administration in 1953 by the Stanford Research Institute in cooperation with the Institute of Research, Lehigh University. For this study, the entire USSBS file at the National Archives was made available; the *Final Report* in the series analyzes the Survey's source materials and groups them into categories as to "most satisfactory," "least satisfactory," etc. All general statements are accompanied by specific examples and page references to the Survey reports in question.

As mentioned earlier, the Survey reports have proved especially useful to historians of the war, whether writing on air topics specifically or preparing general histories. To be sure, the use made of the reports by historians has been uneven at best, owing in part to the great bulk of the full *corpus* of reports and in part to their occasional inconsistencies. Also contributing to what I have called the unevenness of their use by historians and other writers has been a tendency shown by some to use selected parts of the reports to prove a point already decided upon. Some examples of such use are described and commented upon in the General Introduction to *The United States Strategic Bombing Survey*, edited in ten volumes by David MacIsaac (New York: Garland Publishing, Inc., 1976).

In the formulation of air strategy in the years since the war, the one area in which one would expect the Survey's findings to have been most useful, the reports have had little discernible impact. For a few years, while the numbers of nuclear weapons remained small, occasional recourse was made to the Survey reports by those charged

Alexander on 10Sep45: "The reason advanced for denying that there is any valid distinction between strategic and tactical air power is simply that the distinction is not absolute; it is muddy, the two things merge together, it is impossible to form a neat definition that will fit all cases. All this may be granted. To reject the distinction, however, because it is not absolute is to be purely theoretical. In practical affairs distinctions are never absolute. It might as well be argued that there is no difference between a young man and an old man since you cannot say just when youth ends and age begins. . . ." NA, 243, 1, 34, 300.6-B.

7. By "centrally controlled," airmen have traditionally meant that all aircraft in a given theater be deployed from a central air headquarters rather than have the aircraft parcelled out to support specific ground or naval units. By this means, air power can be applied in mass at the decisive points. In the bombing of North Vietnam, however, central control, exerted from within the White House itself, was carried to such extremes as to destroy its original *raison d'être*—flexibility. See Colonel (USAF, Ret.) Jack Broughton's *Thud Ridge* (Philadelphia & New York: J.P. Lippincott Co., 1969), *passim*; the Introduction by Hanson Baldwin says much in few words.

8. In a presumably satirical article, Mrs. Drew applied the comparative method to the recent history of government commissions, drawing up eight "rules" on "The Uses of Commissions;" three on "How to Choose a Commission;" five on "The Process of Commissionmanship;" and five on "How to Handle the Report." Examples are cited for each rule; the three on how to choose a commission are as follows: 1. Neither commissioners nor staff should be controversial; 2. Commissioners should be bipartisan and otherwise representative of constituent groups, as long as they are respectable; 3. The chairman should be able, and safe, but better safe than able. *The Atlantic Monthly*, May 1968, pp. 45-49.

9. It is another question, of course, whether today's elaborate intelligence network is capable, by its very nature, of answering for the future the precise questions that might be asked of it. That network is made up of eight cooperating (but essentially autonomous) agencies: CIA; Defense Intelligence Agency; National Security Agency; and the Intelligence sections of the Army, Air Force, Navy, State Department, and Federal Bureau of Investigation. Each member of each agency should ponder, each day, the remarks of Marc Bloch about the intelligence functions of the French Army in 1940: "In the first place, too many people were concerned in the business of gathering information, and there was an ugly atmosphere of competition among them. . . . As soon as Intelligence found out anything, it proceeded to put it down on paper, mark the document in red ink 'Top Secret,' and then shut it away from all those likely to be interested in its contents, in a safe with a triple lock." *Strange Defeat* (Oxford University Press, 1949), pp. 83-84.

10. Colonel Broughton (in *Thud Ridge*, p. 63) makes the point succinctly; after

complaining about the selection of targets in North Vietnam and the dictating, from the White House, of aerial tactics to be employed, he goes on: "The pressure was on to get this complex [of targets], and when we got into that configuration, it was amazing how the simple basic portents of warfare dipped by the boards to be replaced by determination to accomplish what we had been directed to accomplish." Cf. the present writer's "Leadership, Strategy, and Reflection: Or, 'What's An Officer To Do?'" in *Air University Review*, 19, 4 (May-June 1968), pp. 88-93; especially p. 92.

11. See Clark M. Clifford, "A Viet Nam Reappraisal: The Personal History of One Man's View and How it Evolved," *Foreign Affairs*, 47, 4 (July 1969), pp. 601-22.

12. Stewart Alsop, *The Center: People and Power in Political Washington* (New York: Harper & Row, 1968), pp. 162-63. Alsop credits these stands taken by Nitze as responsible for his being passed over for secretary of defense upon the resignation of R. S. McNamara. On the question of bombing North Vietnam, Nitze's status as a "hidden dove at the Pentagon" is supported by the *New York Times* reports (by Hedrick Smith, *et al.*) in early March 1969 purporting to describe the events leading up to the bombing halt of March 1968.

13. Most of the widely read reports are in that sanitized style wherein we of the twentieth century have learned to describe the indescribably horrible. There are some notable exceptions, however; e.g., "The Nature of Air Raid Casualties," Chapter 3 of USSBS European item nr. 65, *The Effect of Bombing on Health and Medical Care in Germany*. The photographs in that chapter equal or exceed any that we have from Dachau or Auschwitz.

14. New York: McGraw-Hill Book Company, Inc., 1951.

15. University of Oklahoma Press, 1958.

16. New York: E.P. Dutton & Company, Inc., 1949. Leighton served with the Morale Division of USSBS in Japan.

17. Harvard University Press, 1959. Klein served with USSBS in both Europe and Japan.

18. University of London: The Athlone Press, 1965.

19. University of Minnesota Press, 1949. Cohen, then Lieutenant, USNR, served with USSBS in Japan.

20. Boston: National Fire Protection Association, 1946. Bond, a noted expert in fire damage, served with the Physical Damage Division in Europe.

Alexander on 10Sep45: "The reason advanced for denying that there is any valid distinction between strategic and tactical air power is simply that the distinction is not absolute; it is muddy, the two things merge together, it is impossible to form a neat definition that will fit all cases. All this may be granted. To reject the distinction, however, because it is not absolute is to be purely theoretical. In practical affairs distinctions are never absolute. It might as well be argued that there is no difference between a young man and an old man since you cannot say just when youth ends and age begins. . . ." NA, 243, 1, 34, 300.6-B.

7. By "centrally controlled," airmen have traditionally meant that all aircraft in a given theater be deployed from a central air headquarters rather than have the aircraft parcelled out to support specific ground or naval units. By this means, air power can be applied in mass at the decisive points. In the bombing of North Vietnam, however, central control, exerted from within the White House itself, was carried to such extremes as to destroy its original *raison d'être*—flexibility. See Colonel (USAF, Ret.) Jack Broughton's *Thud Ridge* (Philadelphia & New York: J.P. Lippincott Co., 1969), *passim*; the Introduction by Hanson Baldwin says much in few words.

8. In a presumably satirical article, Mrs. Drew applied the comparative method to the recent history of government commissions, drawing up eight "rules" on "The Uses of Commissions:" three on "How to Choose a Commission;" five on "The Process of Commissionmanship;" and five on "How to Handle the Report." Examples are cited for each rule; the three on how to choose a commission are as follows: 1. Neither commissioners nor staff should be controversial; 2. Commissioners should be bipartisan and otherwise representative of constituent groups, as long as they are respectable; 3. The chairman should be able, and safe, but better safe than able. *The Atlantic Monthly*, May 1968, pp. 45-49.

9. It is another question, of course, whether today's elaborate intelligence network is capable, by its very nature, of answering for the future the precise questions that might be asked of it. That network is made up of eight cooperating (but essentially autonomous) agencies: CIA; Defense Intelligence Agency; National Security Agency; and the Intelligence sections of the Army, Air Force, Navy, State Department, and Federal Bureau of Investigation. Each member of each agency should ponder, each day, the remarks of Marc Bloch about the intelligence functions of the French Army in 1940: "In the first place, too many people were concerned in the business of gathering information, and there was an ugly atmosphere of competition among them. . . . As soon as Intelligence found out anything, it proceeded to put it down on paper, mark the document in red ink "Top Secret," and then shut it away from all those likely to be interested in its contents, in a safe with a triple lock." *Strange Defeat* (Oxford University Press, 1949), pp. 83-84.

10. Colonel Broughton (in *Thud Ridge*, p. 63) makes the point succinctly; after

complaining about the selection of targets in North Vietnam and the dictating, from the White House, of aerial tactics to be employed, he goes on: "The pressure was on to get this complex [of targets], and when we got into that configuration, it was amazing how the simple basic portents of warfare dipped by the boards to be replaced by determination to accomplish what we had been directed to accomplish." Cf. the present writer's "Leadership, Strategy, and Reflection: Or, 'What's An Officer To Do?'" in *Air University Review*, 19, 4 (May-June 1968), pp. 88-93; especially p. 92.

11. See Clark M. Clifford, "A Viet Nam Reappraisal: The Personal History of One Man's View and How it Evolved," *Foreign Affairs*, 47, 4 (July 1969), pp. 601-22.

12. Stewart Alsop, *The Center: People and Power in Political Washington* (New York: Harper & Row, 1968), pp. 162-63. Alsop credits these stands taken by Nitze as responsible for his being passed over for secretary of defense upon the resignation of R. S. McNamara. On the question of bombing North Vietnam, Nitze's status as a "hidden dove at the Pentagon" is supported by the *New York Times* reports (by Hedrick Smith, *et al.*) in early March 1969 purporting to describe the events leading up to the bombing halt of March 1968.

13. Most of the widely read reports are in that sanitized style wherein we of the twentieth century have learned to describe the indescribably horrible. There are some notable exceptions, however; e.g., "The Nature of Air Raid Casualties," Chapter 3 of USSBS European item nr. 65, *The Effect of Bombing on Health and Medical Care in Germany*. The photographs in that chapter equal or exceed any that we have from Dachau or Auschwitz.

14. New York: McGraw-Hill Book Company, Inc., 1951.

15. University of Oklahoma Press, 1958.

16. New York: E.P. Dutton & Company, Inc., 1949. Leighton served with the Morale Division of USSBS in Japan.

17. Harvard University Press, 1959. Klein served with USSBS in both Europe and Japan.

18. University of London: The Athlone Press, 1965.

19. University of Minnesota Press, 1949. Cohen, then Lieutenant, USNR, served with USSBS in Japan.

20. Boston: National Fire Protection Association, 1946. Bond, a noted expert in fire damage, served with the Physical Damage Division in Europe.

55. NA, 243, 1, 67, 322.011.

56. McMurrin's letter in NA, 243, 1, 59, 319.2; D'Olier's in NA, 243, 1, 60, 319.4.

57. NA, 243, 1, 12, 210.2.

58. "We must appreciate . . . that it is still defensive action, and not aggression, if we intercept and destroy an enemy force en route to our Nation, bent upon our destruction. Still further, we must recognize that an overt act of war has been committed by an enemy when that enemy builds a military force intended for our destruction, and that the destruction of that force before it can be launched or employed is defensive action and not aggression." *Air Campaigns of the Pacific War*, USSBS Pacific item Nr. 71a, pp. 68-69.

59. *Ibid.*, p. 69.

60. NA, 243, 1, 80, 461.

61. The original of this memorandum, bearing the signature of D'Olier, is in NA, 243, 1, 82, 486.4, "Printing and Binding."

NOTES

CHAPTER SEVEN

1. Russell's European Oil Division had been recruited largely from among New York-based companies, and D'Olier had agreed—after Russell had arranged for office space—to let them finish their reports in New York. Like Russell's, Spaght's return to his parent company was urgently pressed on D'Olier who agreed that the Pacific Oil Division could finish its work near Spaght's office in San Francisco.

2. *New York Times*, 28Oct44, p. 10, bottom of column 2.

3. *Ibid.*, 13Mar45, p. 4, column 3.

4. *Baltimore Sun*, 25May45, Philip W. Whitcomb's article under headline, "Problems Casts Doubt on Efficacy of Strategic Bombing of Reich," dateline Hamburg 23May45.

5. *New York Times*, 2Sep45, pp. 18, column 3. Because of the "conservative" view cited by Baldwin, there was growing concern within the Survey and within Lovett's office that the detailed findings of the Survey might not be published. budgeting concern over the cost of publication was also present. These factors, taken together with the precision and accuracy of Baldwin's column as a whole, have led the present writer to presume that the column was a "plant" to encourage public interest.

6. Transcript of press conference in Air Force Archives, control nr. 137.5-2.

7. Anderson's stance in this matter directly paralleled that of Billy Mitchell twenty six years earlier: "Mitchell's basic answer to his critics was an appeal to look to the future. Only an independent organization manned by airmen could develop the full potential of aeronautics. When one congressional committee asked him about Trenchard's Independent Bombing Force, the closest example of the kind of independent operation aviation might pursue in the future, Mitchell would make no claim for it. The IBF was 'just beginning. So I say, you cannot look back.'" *Hurley Mitchell*, pp. 47-48.

The volume presents a completely inaccurate and entirely biased account of our war against Japan which is of absolutely no historical value, consistently misrepresents facts, and indeed, often ignores facts and employs falsehood. From this light treatment of the Pacific war, the authors have arrived at a series of biased conclusions which, lacking any degree of factual support, not only are entirely unjustified but impose a threat to our future security. The central theme of the volume is the development of the idea that air power alone made possible our victory in the Pacific, a theme which is labored on every page. As used in this volume, the term air power apparently denotes a force which is not only irresistible but also is completely independent from any consideration of logistics requirements or design restrictions.

Underlying the main theme that air power alone won the war is a vicious and deliberate attempt to discredit the naval service. No opportunity is lost to belittle the efforts of the Navy, to charge the Navy with incompetence and to ridicule the Navy concept of warfare. . . . In asserting that air power was the predominant factor in our victory, the authors do not differentiate between Army Air Forces and Naval carrier-based aviation. They fail to consider the latter as an integral factor of sea power, indicating thereby a total lack of understanding. Thus we find that the battles of the Coral Sea and Midway are to them examples of "air battles exclusively," examples which prove that "air power dominates naval warfare." . . . This loosely-hung-together listing of the alleged handicaps inherent to carrier operations indicates colossal bigotry and complete and obvious disregard for fact. . . . Refutation in the face of the bigotry which would prompt such false considerations would appear to be of no avail. . . . I should like to indicate my complete revulsion to the similes which the authors draw to support their false statements. Throughout the volume they have belittled, ridiculed and otherwise attempted to discredit those naval leaders to whom we all owe so much, but not content, the authors would now paint them as lacking all humanitarian instincts, as accustomed and willing to launch their carrier pilots "with little probability of recovery." Wholly biased, false in great part, the volume "Air Campaigns of the Pacific War" is of no apparent value to other than self-seeking individuals. On the contrary, since it completely misrepresents the historical facts of the Pacific war, it could cause great harm to future military thinking and thus to our national security.⁶⁰

Admiral Ofstie's letter has been quoted at such length for two reasons. First, to make clear the depth of feeling involved in this controversy, lest any reader feel that the generalizations introducing

this topic are overdone. Second, Ofstie's view as to the value (if that word can be used here) of General Anderson's report, along with Ofstie's view of its purpose and intent, is a perfectly adequate expression (were it paraphrased) of the feelings of General Anderson and the Military Analysis Division about *The Campaigns of the Pacific War*. The chairman, having had these feelings expressed to him, felt the best way to end the matter quietly was to be "fair" to the Military Analysis Division and allow publication of their report under the Survey's auspices. For the record, D'Olier addressed the following memorandum to Lieutenant Colonel McMurrin on 23 May 1947:

As a result of staff conferences with Major General Lauris Norstad and Major General Orvil A. Anderson, it has been agreed that the report entitled "Air Campaigns of the Pacific War" should be printed in the clear as an official report of the United States Strategic Bombing Survey. You are hereby directed to take necessary action to print the report in the usual manner.⁶¹

Accordingly, after some further revisions undertaken at the suggestion of General Norstad at AAF Headquarters, General Anderson's report was released to the Government Printing Office late in May; it emerged in July as USSBS Pacific Report #71a, *Air Campaigns of the Pacific War*.

So ended the major setpiece battle of the great Anderson-Navy war, whose minor skirmishes will be treated in the following chapter. Regrettably, the historian must conclude that none of the participants covered himself in glory, but then men rarely do when they are evenly matched, when the stakes are so high, and when the battle must be fought out in the degrading mire of bureaucracy—in any of its forms. Nonetheless, before returning to the Survey as a whole, its last days in Japan, its return to Washington, and to the manner in which its findings were reported to the nation, it is appropriate here to take one further time out, in this case to trace the manner in which the origins of USSBS Pacific Report #71a have previously been reported to the public.

* * *

The trouble seems to have begun when the late availability of 71a prevented its appearance by title and number in most early lists of the USSBS reports (although other late-appearing reports, as, for example, *The War Against Japanese Transportation*, USSBS Pacific

Dear Colonel McMurrin,

I have seen several references during the past few days to the report of the Naval Analysis Division, which I suppose is Admiral Ofstie's report. I was wondering if you could conveniently send me a copy of this report.

Do you happen to know whether it had the approval of the Survey or whether it was his special report?

Sincerely,

(signed) Franklin D'Olier⁵⁵

McMurrin replied to D'Olier on 31 December, explaining the background as best he could, enclosing a copy of Nitze's memorandum, and asking the chairman whether he agreed with the vice-chairman's recommendation. D'Olier replied on 3 January 1947 that he agreed "absolutely 100 percent."⁵⁶ By this point, however, everyone's wires were crossed and a general meeting of the minds was necessary. McMurrin wrote to D'Olier again on 14 January 1947 expressing General Anderson's dismay that by some means or other an exception had been made to the Survey's announced policy in allowing the Naval Analysis Division to publish their report.⁵⁷ Hoping to put an end to acrimonious debate, D'Olier advised Nitze that he should meet once again with General Anderson.

In February, another meeting was held, after which Nitze sent General Anderson's report to Admiral Ofstie for his comments. Ofstie received the report on 3 March and was appalled at what he read. Beginning with a forceful attack on the original bases of U.S. strategy in the Pacific, Anderson's report appeared to represent special pleading at best, deliberate dissimulation at worst. For Ofstie, its conclusions, which included a carefully worded, yet very plain, justification for a theory of "preventive war,"⁵⁸ were wholly one-sided and utterly misleading. Anderson's final paragraphs summed up the report's repeated themes.

Before World War II the growth and development of airpower was restricted by concepts of surface warfare which visualized the air weapon as an ancillary force. Airpower entered the war under this handicap and by slow evolutionary steps, each based

on hindsight, emerged as the primary force. Airpower was the dominant combat force of the war against Japan and was decisive in that—

Airpower dominated its own element.

Airpower dominated naval warfare.

Airpower dominated ground warfare.

Airpower possessed powerful and independent logistical capabilities.

Airpower established effective area interdiction by occupation of the air space over an objective area.

Airpower was capable of forcing the capitulation of an enemy without surface invasion.

.....
If our nation is to survive in this atomic age, logic demands that our national defense agencies be oriented toward airpower, and, further, that the future development of airpower not be restricted, as in pre-World War II years, by the inertia of established organizations or personalities.⁵⁹

Admiral Ofstie's passionate reaction to Anderson's report can be seen in the following excerpts from his reply to Vice-Chairman Nitze:

It was suggested that this manuscript . . . would complement or serve a parallel purpose to "The Campaigns of the Pacific War," which was prepared by the Naval Analysis Division. With the latter suggestion I am in complete disaccord. Rather than being in any sense an objective study of the war, I find "Air Campaigns" to be in major part a vicious and deliberate attempt to discredit the entire Naval service. That is my summary of the manuscript, but I am appending a somewhat detailed analysis should you be interested in the basis of my conclusion. . . . In the circumstances, Mr. Nitze, I would consider the publication of the proposed volume to be directly contrary to the principles under which the Survey operated and decidedly inimicable to the best interests of the armed services and the government, either at this or any future time. . . . I cannot believe that the Directors would willingly associate their names with a paper so completely lacking in character and honesty of purpose.

. And from the equally empassioned enclosure:

ing" between the Japanese and the Germans.

8. For the background to area bombing in Japan, see Craven and Cate, 5, 608-14, especially the section headed, "The Case for Fire Bombing;" for the development of incendiary bombs, going back to World War I, see Brooks E. Kleber and Dale Birdsell, *The Chemical Warfare Service: Chemicals in Combat* (Washington, D.C.: Office of the Chief of Military History, 1966), Chapter 17, "Fire From the Air," and the sources cited therein. USSBS findings supported the basic assumptions re types of construction, building materials, level of building intensity ("builtupness"), and interspersed of residential and industrial buildings. See, for examples: photographs and diagrams, pp. 4.08-4.24 of *Evaluation of Photographic Intelligence in the Japanese Homeland: Part Four, Urban Area Analysis* (USSBS Pacific item Nr. 101); text, photographs, and drawings, pp. 38-115 of *A Report on Physical Damage in Japan* (USSBS Pacific item Nr. 96). A valuable history of target planning for Japanese targets is contained in Appendix A (pp. 69-82) of *The Effects of Strategic Bombing on Japan's War Economy* (USSBS Pacific item Nr. 53); this summary traces the planning of mass incendiary attacks as far back as the February 1943 FEA study entitled "Mass Attack on Japanese Cities."

9. Craven and Cate, 5, 614-20.

20. Most, but not all; an intermittent precision campaign continued (*ibid.*, 645-53), a program of aerial mining of Japanese coastal waters was initiated (662-74), and from 17 April to 11 May XXI Bomber Command devoted 75 percent of its effort to supporting the Okinawa campaign (627-35).

11. Such, at any rate, was the basic conclusion of USSBS; see the *Summary Report (Pacific War)*, especially p. 26, and USSBS Pacific item Nr. 2, *Japan's Struggle to End the War*.

12. J. Kenneth Galbraith, for example. In Major Beveridge's files is a "draft outline of final report left by Galbraith on Tokyo desk." The final lines of the draft refer to "conclusions to be derived from this miserable business." There is a line drawn through "miserable," and pencilled in immediately above is the word "appalling." Other report writers, however, were as ruthlessly logical as General LeMay. "High explosives seemed to cause only localized damage without any possibility of a catastrophe bonus. The incendiary was the logical weapon." *A Report on Physical Damage in Japan*, p. 38; and, "The limiting capabilities of bombsighting equipment and unusual Japanese weather combined to reduce the effectiveness of visual bombing from very high altitudes. The attendant threat of this condition to retard the tempo of bombing operations could not be accepted." This statement, as well as any other, reflects the view of the airmen charged with producing results. It is from the Military Analysis Division report on the Twentieth Air Force (cited above, USSBS Pacific item Nr. 66), p. 32.

13. Times change, of course, and each war (conflict, police action, etc.) differs in

some way from those preceding it. But those repelled by bombing of any form and sharply insistent about "telling it like it is" must allow the historian to tell it like it was. For an analysis of how, in the public mind, the word target became synonymous with the word city, see Robert C. Batchelder's discussion of "The Evolution of Mass Bombing," in his *Irreversible Decision* (Boston: Houghton Mifflin Company, 1962), pp. 170-89.

14. The best statistical tables for the Japanese campaign appear in the final report of the Aircraft Division, *The Japanese Aircraft Industry*. USSBS Pacific item Nr. 15. Like the Oil Division's final report for Europe, this report is the single most valuable report for Japan among those produced outside the chairman's office.

15. A copy of the President's letter is reproduced in Beveridge, Vol. 4, frames 405-6.

16. Beveridge, Vol. 3, p. 249.

17. The total number of civilian technical consultants dropped from about 260 to about 150. One must say "about" because precise figures were not kept, because so many civilians were borrowed temporarily from other agencies, and because some who participated would do so only on an informal basis. At least one-half of the total number of "civilians" employed were used exclusively for their language abilities; these included American, Japanese, Korean (and at least one Russian) civilians. Altogether, the G-1 Section (Administration) of the Services Division processed just over 1,000 persons, the uniformed personnel coming from the Army, Navy, Marines, Coast Guard, Public Health Service, Royal Air Force, and Royal Australian Air Force. *Ibid.*, p. 26.

18. For evidence of this feeling at several levels of authority, see Craven and Cate, 5, 626-27, 636, 653.

19. Revealed in transatlantic telephone conversation, 4Jul45; NA, 243, 1, 45, 311.3. See also the summary of D'Olier's remarks during the 28Nov45 staff conference in Tokyo, Beveridge, Vol. 3, pp. 22-23.

20. NA, 243, 1, 45, 311.3. Another reason for downgrading the civilian complement is revealed in the July staff conferences and telephone conversations. Businesses and industries in the States, from whom men had been borrowed with the understanding that they would be returned sixty days after VE-Day, had begun raising a considerable fuss about their people still in Europe. Some of the men themselves (such as those originally responsible for producing a report on the steel industry—a report neither completed nor published) grew impatient and insisted on returning to their parent companies. Then, of course, there were the academics, whose work year began in September and who were wary of getting caught out of a job in the middle of the school year.

21. Nitze's earlier accomplishments have been recorded in Chapters 4 and 5. His role during the five-week-long confrontation with the JTG in Washington was

exception of a few who flew east from London to Guam, Survey personnel redeployed to the Pacific via Washington and two weeks' furlough in the States.

NOTES

CHAPTER SIX

1. The decision to use China as a base had been prompted in part by President Roosevelt's decision to encourage Chinese morale. For the background to B-29 design, development, and employment, see Craven and Cate, 5, Chapter 1, "The VLR Project." In time, the VLR designation came to be attached to fighter escorts, the B-29s being designated VHB (Very Heavy Bombardment) aircraft. A good brief narrative of B-29 operations is in A. Russell Buchanan, *The United States and World War II* (New York: Harper and Row, 1964), Vol. 2, pp. 568-94.

2. Craven and Cate, 5, Chapter 2, "The Twentieth Air Force."

3. "Hurriedly" applies only in retrospect; the rate of progress in getting the Marianas bases into operation was agonizingly slow for the air commander on the scene. See Major General Haywood S. Hansell, Jr., "The First of the Twenty-First," *Air University Review*, 18, 4 (May-June 1967), pp. 1-17. The detailed record of operations from India and China (Project MATTERHORN) is in Craven and Cate, 5, Chapters 3-6.

4. Hansell's prewar role at the Air Corps Tactical School and his part in formulating AWP-1 were treated above in Chapter 1.

5. Craven and Cate, 5, 546-76, for the initial campaign from the Marianas and the operational difficulties encountered; the quotation is from page 576.

6. Analyzed in Craven and Cate, 5, 573-76, and in USSBS Pacific item Nr. 66, *The Strategic Air Operation of Very Heavy Bombardment in the War Against Japan*.

7. Many Americans, civilians as well as soldiers, could distinguish between the Nazis and the German people as a whole; Pearl Harbor, "a sneak attack," confounded the basic problem of the difference in race, and resulted in no such distinctions for "the Japs." One of the highest ranking air commanders of the war has privately confirmed to the author that there existed "a basic distinction in our think-

Collection, Box 20.

8. "Air force commanders actually enjoyed great latitude in waging the air war and sometimes paid scant attention to the official priority lists drafted with such care at higher echelons. And the weather was final arbiter in any case." Craven and Cate, 3, 721. Controlling the effort of RAF Bomber Command proved even more difficult; see Webster and Frankland, 3, 46, 48-49, 57, 304-305, 310.

9. Ltr, Arnold to Spaatz, 14Jan45, quoted in Craven and Cate, 3, 716.

10. Craven and Cate never really face up to this issue, although they do admit (3, 727) that "opposition in the AAF to area bombardment had actually weakened" by February 1945. Their treatment of Dresden, however, is disingenuous at best; and for reasons best known to the authors, they make no mention at all of the Eighth Air Force attack on Dresden, 17Apr45, comprising 572 effective sorties. See Webster and Frankland, 3, 108-09.

11. Anthony Verrier, *The Bomber Offensive* (New York: Macmillan, 1969), p. 304 (emphasis added). Verrier's greater concern is that he sees a message for today in the conduct of the World War II air offensive. That offensive, he argues, directed by men who became obsessed with what was tactically (or operationally) feasible, got out of control. What assurance have we, he asks, that any future air war, presumably nuclear, will remain under the control of the properly constituted political leadership? It is unlikely that his questions will give pause to the Herman Kahns among us.

12. Although he tries very hard to avoid doing so, Verrier seems occasionally to blend together the differing operational imperatives of the Eighth Air Force and RAF Bomber Command.

13. *American Strategy in World War II: A Reconsideration*, pp. 114-17, 120-21.

14. Ltr to the author, 2Jul69.

15. "The strategic air offensive was practically over by the first of April. The Fifteenth Air Force was now devoted to purely tactical objectives. . . . The Eighth Air Force carried out ten last strategic missions in Germany before redirecting its effort entirely to the land battle." Craven and Cate, 3, 752.

16. The term "improvised air war" should not be misconstrued to imply that the air war was conducted without an overall plan. The term was first used by Major General Orvil A. Anderson, who was referring to the necessity, as seen by the commanders on the scene, so often to deviate from the original plan owing to weather conditions, diversions created by the demands of the ground forces, etc. "Improvised," therefore, as I am using it, refers to the day-to-day difficulties that had to be surmounted over a period of three years. The theme of Major General Haywood S. Hansell's *Air Plan that Defeated Hitler*, reiterated by Hansell to the author as recently as 24Aug75, is that had the air forces been allowed to proceed under the original plan (AWPD-1), "the devastation that characterized Germany in March of 1945 might have been imposed by mid-summer of 1944."

17. NA, 243, 1, 63, 319.9.

18. Cf. Perera's *Washington and War Years* (cited earlier and in the Bibliography), pp. 119-77, for a more detailed analysis of the imperatives, both real and perceived, affecting these elements of decision.

19. Ltr, Nitze to Alexander, 4Apr45, in the file cited above in note 17.

20. The complete report, comprising a three-page covering letter from Mr. D'Olier and thirteen variously authored attachments, is in NA, 243, 1, 71, 337, "Conferences, Military & Naval & Others."

21. Transatlantic telephone conversation, 13Apr45, in NA, 243, 1, 45, 311.3.

22. The most valuable portions of Major Beveridge's contemporary history are the chapters devoted to each of the Survey's thirteen Divisions. Divided topically after page 120, his account loses the threads of historical continuity, but for each Division he lists the individual Field Teams, their personnel, their itineraries, and their adventures. See Beveridge, Vol. 1, pp. 120-72, 241-400.

23. Ltr, Lieutenant Colonel Garth Cobb (in Paris) to Major Colbert, 19Sep44, NA, 243, 1, 62, 319.5.

24. "Administrative Report on Renault Trip," 30Nov44, NA, 243, 1, 35, 300.6-D, "Economic Division, 1944, Oct-Dec."

25. Ltr, Nitze to Alexander, 5Apr45, NA, 243, 1, 48, 312.1.

26. As indicated in one of the quotations heading this chapter.

27. Ltr, Commander Johnston to T. P. Wright, 24Apr45, NA, 243, 1, 300.6-B. For the depredations of Allied troops, NA, 243, 1, 39, 300.6-E; for those of DP's, NA, 243, 1, 54, 314.7, draft histories of Reg. Hq. #4 (Frankfort) and #5 (Essen); also Beveridge, Vol. 1, p. 193.

28. One of the effects of the bombing was to require the Germans continually to revise their production plans. Such repeated revisions made it almost impossible to identify production *goals* covering any period longer than three months. Destruction of records, either by bombing or by the Germans themselves, left numerous gaps in the records of *actual* production.

29. One example: when compiling man-hour figures for skilled v. unskilled labor, the Germans counted under "skilled labor" *any* work performed by their skilled craftsmen and machine operators; hence, skilled laborers pulled off the job to clean up debris had their time recorded under "skilled labor" while unskilled laborers performing the same task had their time recorded as "unskilled labor." A thorough discussion of semantic and translating difficulties brought on by the "emergent aspect" of German word construction is contained in an unsigned memo to George Ball, 6Jan45, "Progress From 26 December to 6 January," NA, 243, 1, 54, 314.7, "Trans Div Hist."

30. Noted in most of the final reports of each Division of the Survey, this problem was described also in the Coffin Report (to be described below in this chapter): "In many fields the production statistics are full of traps. . . . It must be appreciated that they were usually compiled under some pressure from above calling for increased production. 'You must demand the impossible in order to get the maximum,'

319.4).

56. To be treated in the next chapter.

57. The chart reproduced as Figure 2 was known as "the doughnut chart." It was designed by Commander Johnston during February as the best way visually to portray the distinctly non-military organizational scheme of the Survey. This version of the chart dates from 7June45; earlier versions (18Feb, 14Mar, 6Apr, and 25May) are reproduced in Beveridge, Vol. 2, frames 986-91.

58. Ltr, Alexander to Anderson, 20Dec44, Spaatz Collection, Box 225.

59. The numerous versions of this outline are preserved in NA, 243, 1, 34, 300.6 and 300.6-D.

60. Cabot was born at Brookline, Massachusetts, 27 November 1900; A.B., Harvard, 1922; L.L.B., 1925; practiced law in Boston, first with Choate, Hall, and Stewart, and after 1933 with Ropes, Gray, Best, Coolidge, and Rugg; appointed to the Superior Court in 1943. The initial approach to Cabot was made by his long-time friend, Colonel W. Barton Leach (see Chapter 2). Ltr, J. Harris Ward to Alexander, 26Feb45, NA, 243, 1, 19, 230.03.

61. The names and backgrounds of Cabot's principal editorial assistants are given in Beveridge, Vol. 1, pp. 225-26. Among them were Major Colbert, Major J. Harris Ward, John D. Glover, an assistant professor of economics from Harvard, and a number of others with editing or publishing experience.

62. In the early stages it was hoped that Survey teams would be able to inspect the records of all the major German government ministries. As matters turned out, however, many of these never became available, having either been destroyed or otherwise lost as a result of the bombing, or destroyed by the Germans to keep them out of enemy hands.

63. The work of this Section, under Lieutenant Colonel Thomas E. Sunderland, would make a book in itself. Working in both Newark (with personnel and facilities donated by Prudential) and Europe, it compiled on punch cards the entire attack record of both the USAAF and RAF. The *Statistical Appendix to the Overall Report (European War)*, a supplementary volume not normally listed among the Survey's reports, gives a detailed account of their work; cf. Beveridge, Vol. 1, pp. 227-34; NA, 243, 1: 37, 300.6-GG and 300.6-HH; 54, 314.7.

64. One of many similar memos, scattered throughout the USSBS files. This one, 31Jan45, unsigned (but sounding like Nitze), is titled, "Method and Sources of Data for Overall Economic Survey," NA, 243, 1, 34, 300.6-D. In the same folder see a memo, Perera to Nitze, 17Jan45, "Basic Principles for the Economic Investigation."

65. Without exception, every USSBS participant interviewed by the present writer confirms this evaluation of Alexander's role.

NOTES

CHAPTER FIVE

1. Albert Speer, *Inside the Third Reich* (New York: Macmillan, 1970), p. 346; cf. Craven and Cate, 3, 175-79.

2. Craven and Cate, 3, 636-71; 641-42 for the quotation.

3. *Ibid.*, 637-38.

4. *Ibid.*, 649.

5. Many would argue that any such corollary applies only fitfully and has lost its force (thus far) under the nuclear umbrella. Perhaps, but informed critics of certain tactical techniques used by both air and ground units in the Vietnam conflict would insist the corollary remains valid within recognized limits. For World War II, however, there can be no argument. In that conflict, Allied leaders lost sight of the fact that the war was not a thing in itself, and, consequently, the attainment of victory came to be virtually the only limit imposed on the conduct of warfare; in such circumstances it became all but inevitable that the war would not end until all of the counters had been played.

6. Craven and Cate, 3, 668. "The only justification [for the experiment with radar bombing] was the assumption that blind bombing was better than no bombing and it is hard to avoid the conclusion that the 'numbers racket'—pressure from Washington to get more planes over Europe—was responsible for some wasted effort." (xi) "... radar-bombing methods continued to prove disappointing. The Eighth Air Force had an average circular probable error of about two miles on its blind missions, which meant that many of its attacks depended for effectiveness upon drenching an area with bombs." (723) "Approximately 80 percent of all Eighth Air Force and 70 percent of Fifteenth Air Force missions during the last quarter of 1944 were characterized by some employment of blind-bombing devices. . . . In mid-November, operations analysts of the Eighth estimated that slightly more than half the blind missions of that organization were near failures or worse. . . ." (667)

7. Diary entries for 5 and 9Jan45; ltr to General Arnold, 7Jan45; all in Spaatz